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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,090	12/15/2003	Charles D. Hoke	10040070-1	3282

7590 07/12/2005

AGILENT TECHNOLOGIES, INC.
Intellectual Property Administration
Legal Department, DL429
P.O. Box 7599
Loveland, CO 80537-0599

EXAMINER

VU, PHU

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/736,090

Applicant(s)

HOKE ET AL.

Examiner

Phu Vu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 3-8 and 19-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,7-18 and 44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of invention I in the reply filed on 5/13/2005 is acknowledged. The traversal is on the ground(s) that they have the same utility. This is not found persuasive because while the subcombinations have the same utility each has utility on its own. Applicant even discloses that there are 3 embodiments of the invention that uses a pump, reservoir, and alignment layer separately and in combination with one another. These 3 items are not related in any way other than the fact that they have the same intended use. If applicant contends that each of these is novel then they must be examined independently of one another.

The requirement is still deemed proper and is therefore made FINAL and claims 3-6 and 19-43 are withdrawn from consideration.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Fujioka et al. US Patent No. 6803976.

Regarding claim 1, Fujioka teaches an optical element comprising: a transparent top plate (fig. 2a element 202); a substrate comprising an active area (fig. 2a element 101), the substrate and the top plate collectively defining a cavity; a liquid crystal material within the cavity (fig. 2a element 110) and a means for reducing accumulation of contaminants resulting from decomposition of the liquid crystal material due to exposure to radiation (fig. 2a element 105).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujioka et al. US Patent No. 6803976 in view of Hatano et al. US Patent No. 6670753.

Regarding claim 2, Fujioka discloses all the limitations of claim 2 except a reservoir defined in at least one of the substrate and the top plate in fluid communication with the cavity and additional liquid crystal within the reservoir. Fujioka discloses a separate area with liquid crystal in fluid communication with the cavity however Fujioka does not teach a reservoir. Hatano discloses a flat panel display with a reservoir (cover fig. element 249) in fluid communication with a cavity to allow for testing of ionized contaminants. While Hatano's material is a phosphor rather than

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as applicant's as well as Fujioka's which relies on an electrode (cov. fig. element 146) to attract ionized contaminants away from the viewing area to a side area. The rejection merely relies on the teaching of a reservoir to allow for the testing of ionized contaminants. Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to use a reservoir to allow for testing of ionized components.

Regarding claim 7, Fujioka teaches an optical element comprising: a transparent top plate; a substrate comprising an active area, the substrate (fig. 2a element 101) and the top plate collectively (fig. 2a element 202) defining a cavity; a liquid crystal material within the cavity (fig. 2a element 110). Fujioka discloses fails to teach a reservoir defined in at least one of the substrate and the top plate with liquid crystal within the reservoir. Fujioka discloses a separate area with liquid crystal within the cavity however Fujioka does not teach a reservoir. Hatano discloses a flat panel display with a reservoir (cover fig. element 249) in fluid communication with a cavity to allow for testing of ionized contaminants. While Hatano's material is a phosphor rather than liquid crystal, Hatano's device contaminant reduction system works the same way as applicant's as well as Fujioka's which relies on an electrode to attract ionized contaminants away from the viewing area to a side area. The rejection merely relies on the teaching of a reservoir to allow for the testing of ionized contaminants. Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to use a reservoir to allow for testing of ionized components.

Regarding claim 8, Hatano discloses an electrode within the reservoir operable to attract ionic contaminants (cover fig. element 146).

Regarding claim 9, Hatano shows a second electrode (cover figure element 146 is 2 electrodes) connectable with the first to receive a potential difference.

Regarding claim 10, while neither of the references explicitly state that the electrodes are configured to generate a field parallel to the top plate Fujioka requires an electric field substantially parallel to the top plate to force the ions toward the electrode. Also applicant does not provide any reasoning to establish an electric field parallel to the top plate in the specification to show why this feature is not obvious. Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to establish an electric field parallel to the top plate to shift contaminants to either side of the display.

Regarding claim 11, while neither of the references explicitly show that at least one of the depth and width of the reservoir is at least 50 times the distance between the top plate and the substrate the references do show a reservoir with a width and depth however the dimensions are unspecified. However applicant does not provide any reason in the specification to support a reservoir width or depth 50 times the distance between the top plate and the substrate. Thus, it is considered obvious to one of ordinary skill in the art to use a reservoir with a depth 50 times the distance between the top plate and substrate to prevent contaminant particles from escaping the reservoir. Therefore, at the time of the invention, it would have been obvious to one of ordinary

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skill in the art to make the reservoir depth greater than 50 times the distance between the substrate and top plate to prevent contaminant particles from escaping the reservoir.

Regarding claim 12, while neither of the references explicitly state that the electrodes are configured to generate a field parallel to the top plate Fujioka requires an electric field substantially parallel to the top plate to force the ions toward the electrode. Also applicant does not provide any reasoning to establish an electric field parallel to the top plate in the specification to show why this feature is not obvious. Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to establish an electric field parallel to the top plate to shift contaminants to either side of the display.

Regarding claim 13, Hatano shows the reservoir being in a non-illuminated area of the substrate (see cover fig. element 249).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujioka and Hatano in view of Kato et al. US Patent No. 5688708.

Regarding claim 14, Fujioka and Hatano disclose all the limitations of claim 14 except the reservoir surrounding the active area. Kato discloses a reservoir surrounding the active area to reduce contamination during sealing and normal operation (see abstract). Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to make the reservoir surround the active area to reduce contamination during sealing and normal operation.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujioka and Hatano in view of Nagata et al. US Publication No 2004/0021805.

Fujioka and Hatano disclose all the limitations of claim 15 except for a filter that separates the liquid crystal contaminants. Nagata teaches a filter to reduce contamination in the liquid crystal (see [0075]). Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to use a filter to reduce contamination in the liquid crystal.

Claims 16-18 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujioka and Hatano in view of Colgan et al. US Patent No. 6424388.

Regarding claim 16 and 18, Fujioka and Hatano disclose all the limitations the claim except the liquid crystal cell illuminated by UV light and is a component in a spatial light modulator. Colgan teaches a spatial light modulator used in patterning spacers that incorporates a liquid crystal cell and serves as a mask in photolithography using UV radiation (see column 9 lines 28-40) that has high optical throughput and contrast (see abstract). Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate a liquid crystal cell into a spatial light modulator to provide high optical throughput and contrast. UV illumination is considered a normal function of a SLM as shown by the reference therefore this limitation is also obvious.

Regarding claim 17, the SLM of Colgan uses a semiconductor substrate (see abstract).

Regarding claim 44, Fujioka teaches an optical element comprising: a transparent top plate; a substrate comprising an active area, the substrate and the top

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plate collectively defining a cavity; a liquid crystal material within the cavity and a means for reducing accumulation of contaminants resulting from decomposition of the liquid crystal material due to exposure to radiation. Fujioka does not teach a photolithography system for transferring a pattern onto a substrate, the substrate comprising: a source of ultraviolet light, a spatial light modulator which comprises the liquid crystal cell nor projection optics located between the SLM and the substrate however, Colgan discloses teach a photolithography system for transferring a pattern onto a substrate, the substrate comprising: a source of ultraviolet light (see column 9 lines 28-40)), a spatial light modulator which comprises the liquid crystal cell and projection optics located between the SLM (see fig. 1 and column 2 line 64-column 3 line 40) that provides high optical throughput (see abstract). Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate a liquid crystal cell into a SLM to provide a photolithography system with high optical throughput.

Conclusion

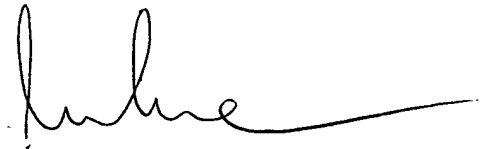
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phu Vu whose telephone number is (571)-272-1562. The examiner can normally be reached on 8AM-5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571)-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Phu Vu
Examiner
AU 2871

A handwritten signature in black ink, appearing to read 'Dung T. Nguyen', with a long horizontal flourish extending to the right.

DUNG T. NGUYEN
PRIMARY EXAMINER